TOTAL SHEETS

FIG. 1

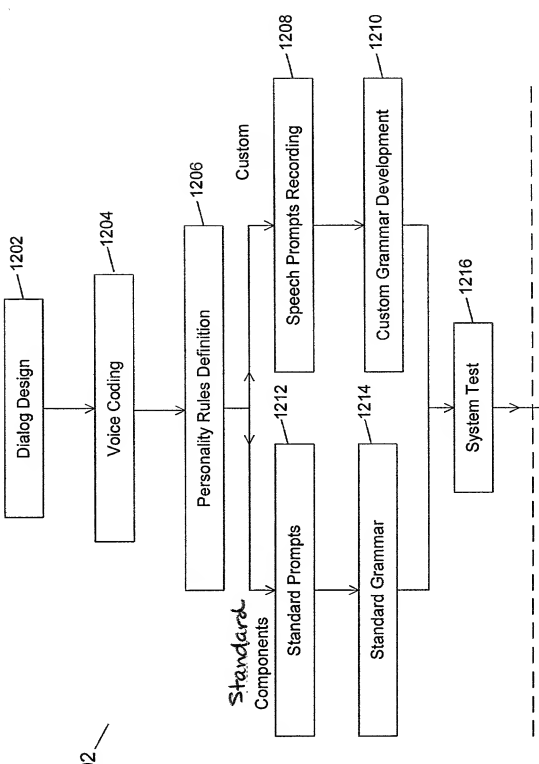
1102
Dialog Design
1202
Voice Coding
1204
Personality Rules Definition
1206
Standard Components
Custom
Standard Prompts
1212
Standard Grammar
1214
Speech Prompts Recording
1208
Custom Grammar Development
1210
System Test
1216
Deployment
1104

FIG. 2

Attorney Docket No.: M-7199-SP US
First Inventor: Mark Phillips
Title: Voice Application Development Methodology

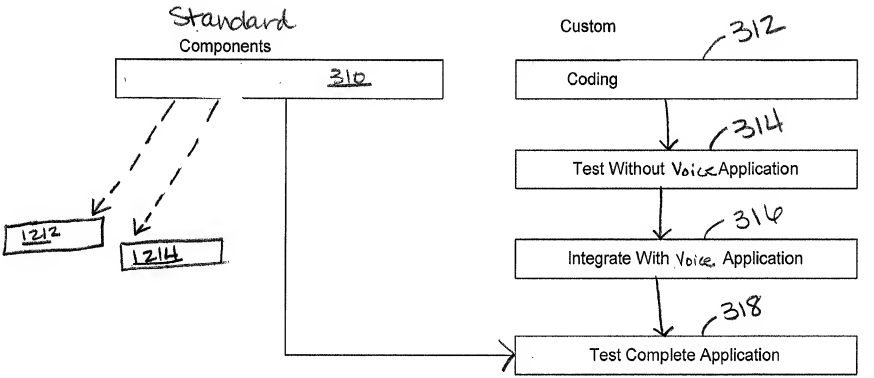

FIG. 3

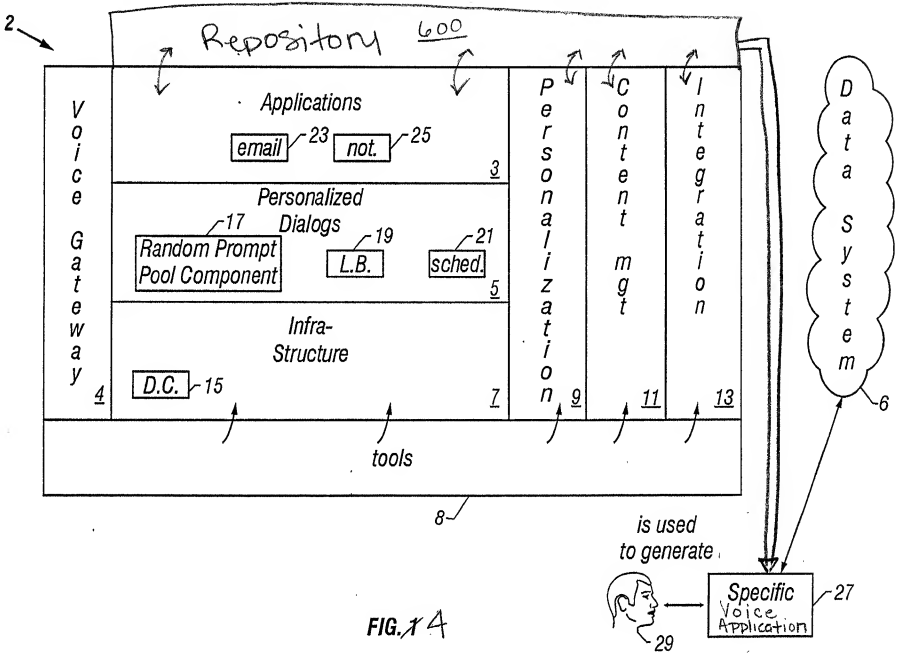
2
Repository 600
Voice Gateway 4
Applications
email 23
not. 25
3
Personalized Dialogs
17
Random Prompt Pool Component
19
L.B.
21
sched.
5
Infra-Structure
D.C. 15
7
Personalization 9
Content mgt 11
Integration 13
Data System 6
tools
8
is used to generate
Specific Voice Application 27
29

FIG. 14

600
Voice Application Repository
512
Voice Application
Dialog Components
Dialog Control
625
Voice Application Services
Voice Services
Rules Integration
Messaging
HTTP
Voice Interpreter
Automatic Speech Recognition
Text-to-Speech
Telephony Interface
PSTN
External System
External System
External System
500

FIG. 5

1600
Voice Application Reposiory
HTTP
525
Form Mapping
Dialog Controller
524
Application Specific Controller
522
Component Control
528
Application Control
521
Domain Control
15
Configuration File
530
Voice Application Services
535
Rules Subsystem
537
Voice Services
538

Fig. 5A

Attorney Docket No.: M-7199-5P US
First Inventor: Mark Phillips
Title: Voice Application Development Methodology

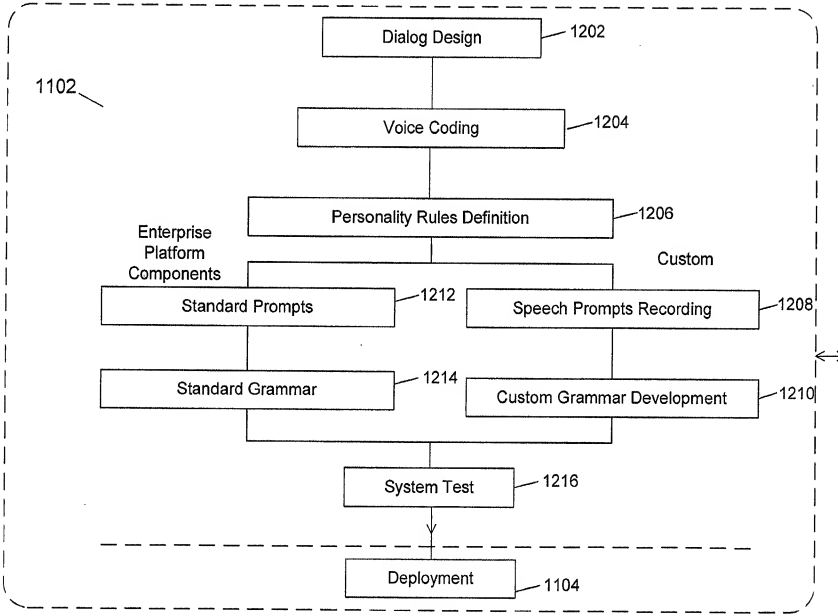

FIG. 6

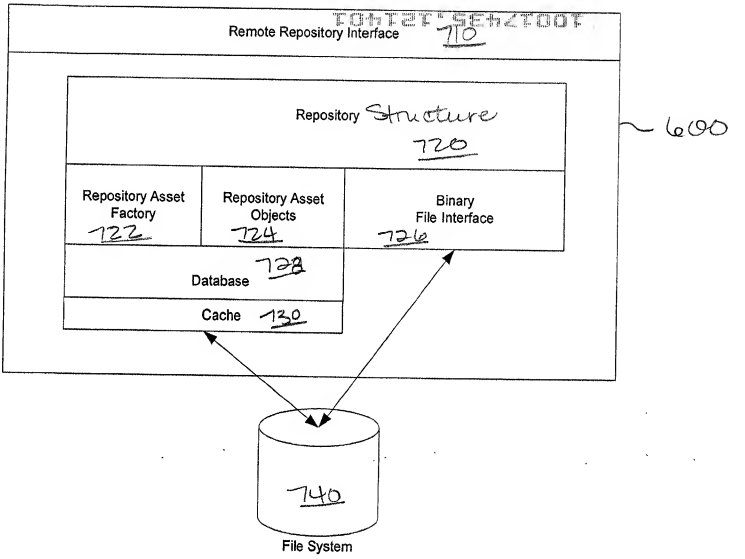
Remote Repository Interface
710
Repository Structure
720
600
Repository Asset Factory
722
Repository Asset Objects
724
Binary File Interface
726
Database
728
Cache
730
740
File System

Fig. 7

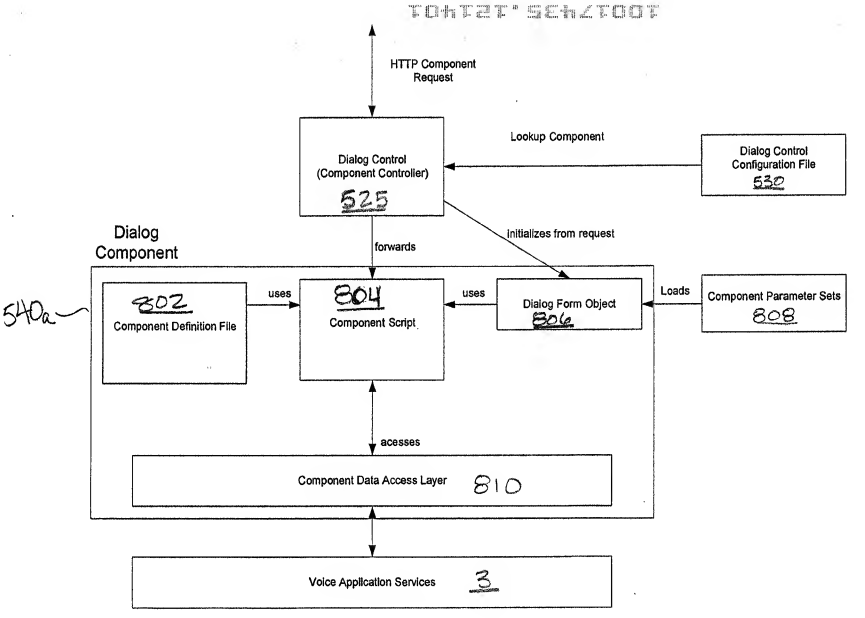
HTTP Component Request
Dialog Control (Component Controller)
525
Lookup Component
Dialog Control Configuration File
520
forwards
Initializes from request
Dialog Component
540a
802
Component Definition File
uses
804
Component Script
uses
Dialog Form Object
806
Loads
Component Parameter Sets
808
acesses
Component Data Access Layer
810
Voice Application Services
3

Fig. 8

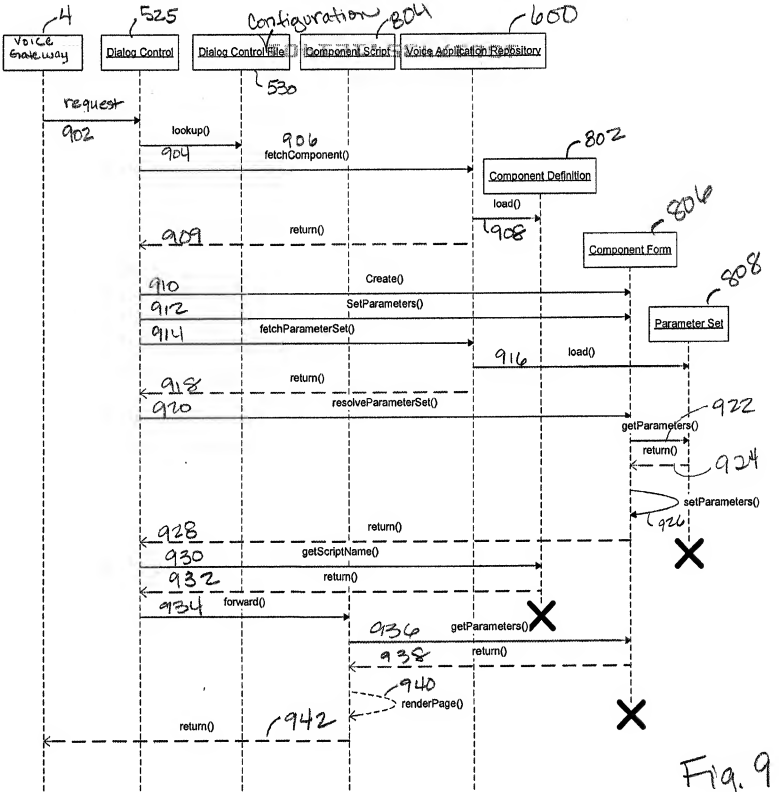
4
Voice Gateway
525
Dialog Control
Configuration
Dialog Control File
530
804
Component Script
600
Voice Application Repository
request
902
lookup()
904
906
fetchComponent()
802
Component Definition
load()
908
return()
909
806
Component Form
910
Create()
912
SetParameters()
808
Parameter Set
914
fetchParameterSet()
916
load()
return()
918
920
resolveParameterSet()
922
getParameters()
return()
924
setParameters()
926
return()
928
930
getScriptName()
932
return()
934
forward()
936
getParameters()
938
return()
940
renderPage()
return()
942

Fig. 9

Dialog Component
Custom Tag Library
1004
include
Prompt Engine
Prompt Servlet
1006
execute
Prompt Interpreter
JavaScript Engine
1008
1010
load
Voice Application Repository
600
1000

Fig. 10

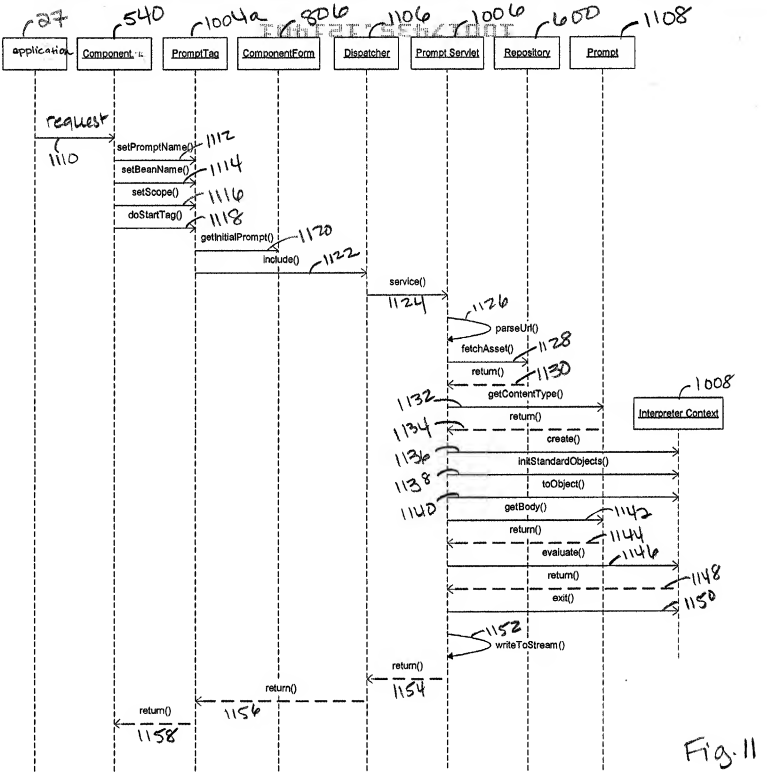
application
Component
PromptTag
ComponentForm
Dispatcher
Prompt Servlet
Repository
Prompt
Interpreter Context
request
1110
setPromptName()
1112
setBeanName()
1114
setScope()
1116
doStartTag()
1118
getInitialPrompt()
1120
include()
1122
service()
1124
parseUrl()
1126
fetchAsset()
1128
return()
1130
getContentType()
1132
return()
1134
create()
1136
initStandardObjects()
1138
toObject()
1140
getBody()
1142
return()
1144
evaluate()
1146
return()
1148
exit()
1150
writeToStream()
1152
return()
1154
return()
1156
return()
1158

Fig. 11

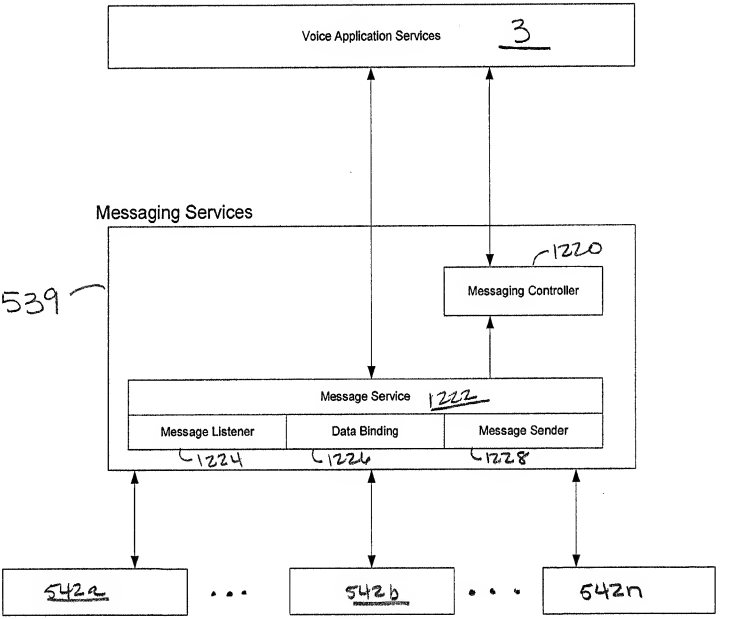
Voice Application Services
3
Messaging Services
539
1220
Messaging Controller
Message Service
1222
Message Listener
Data Binding
Message Sender
1224
1226
1228
542a
542b
542n

Fig. 12

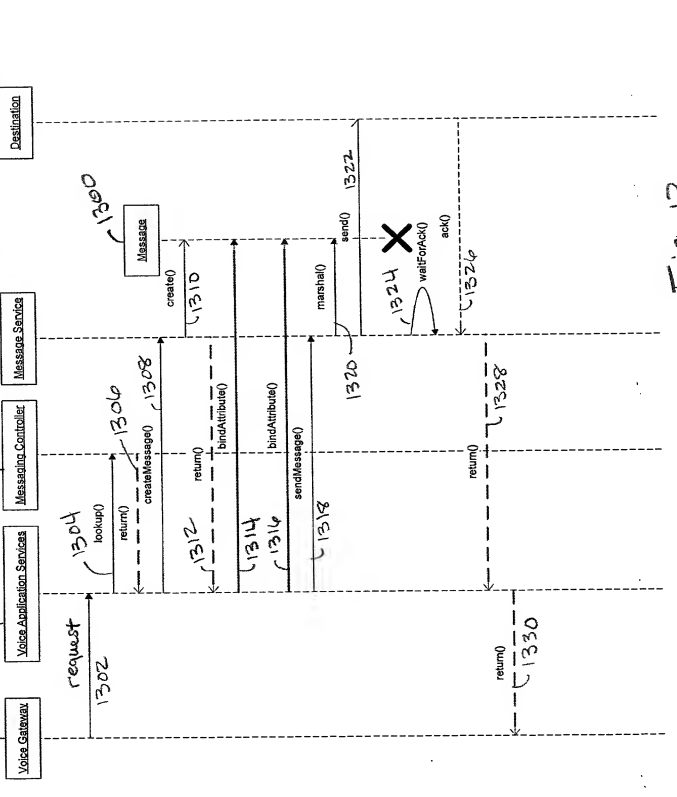
Voice Gateway
Voice Application Services
Messaging Controller
Message Service
Message
Destination
request
1302
lookup()
1304
return()
createMessage()
1306
1308
create()
1310
return()
1312
bindAttribute()
1314
bindAttribute()
1316
sendMessage()
1318
marshal()
1320
send()
1322
waitForAck()
1324
ack()
1326
return()
1328
return()
1330

Fig. 13

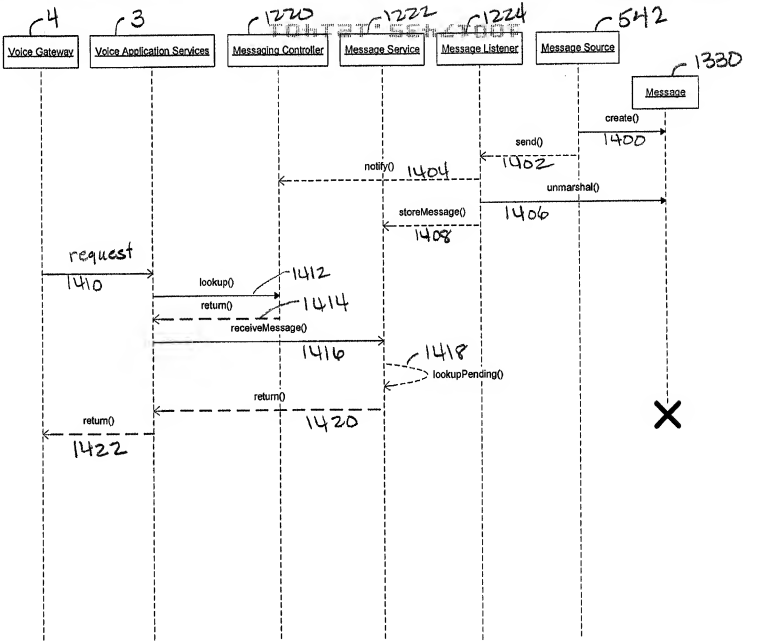
4
3
1220
1222
1224
542
Voice Gateway
Voice Application Services
Messaging Controller
Message Service
Message Listener
Message Source
1330
Message
create()
1400
send()
1402
notify()
1404
unmarshal()
1406
storeMessage()
1408
request
1410
lookup()
1412
return()
1414
receiveMessage()
1416
1418
lookupPending()
return()
1420
return()
1422

Fig. 14

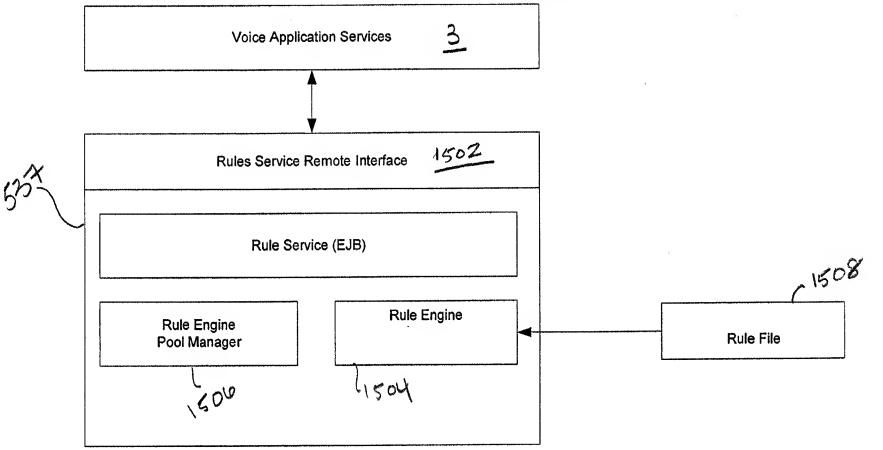
Voice Application Services
3
Rules Service Remote Interface
1502
537
Rule Service (EJB)
Rule Engine Pool Manager
1506
Rule Engine
1504
Rule File
1508

Fig. 15

Voice Application Services
3
Tracking JMS Queue Sender
1602
Tracking JMS Queue Receiver
1604
Tracking EJB Remote Interface
1606
Tracking EJB
1608
Data Access Object
1610
Data Access Object Factory
1612
1614
Database
1600

Fig. 16

Exhibit Sheet

FIG. 1

Attorney Docket No.: M-7199-sp US
First Inventor: Mark Phillips
Title: Voice Application Development Methodology

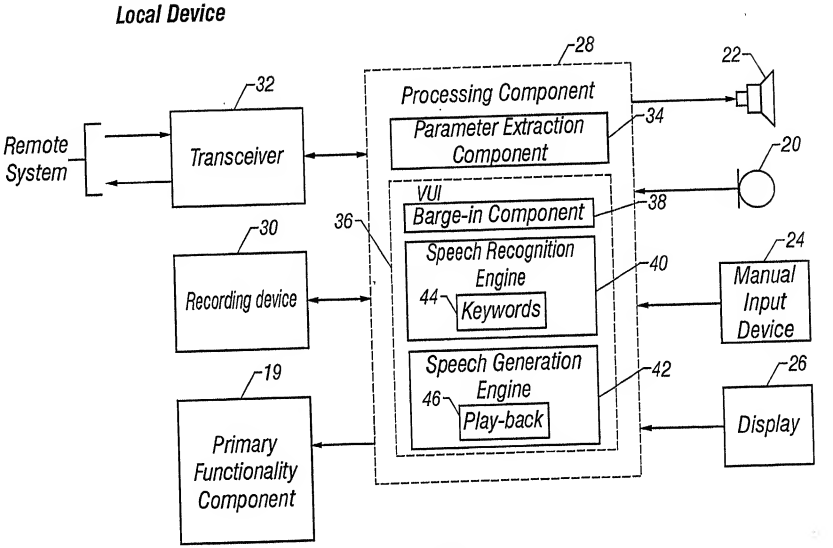

FIG. 18

TONTAT SEMPTOT

FIG. 1 9

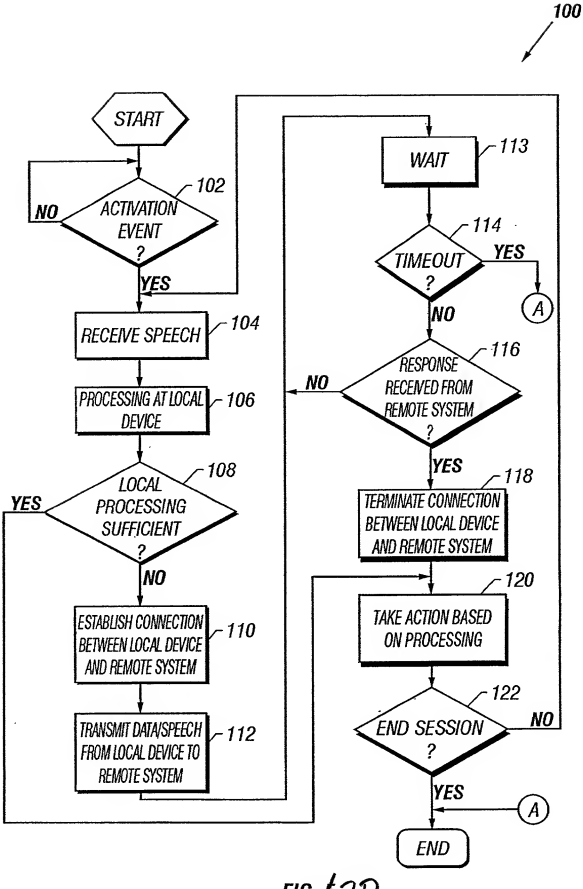
100
START
102
ACTIVATION EVENT ?
NO
YES
RECEIVE SPEECH
104
PROCESSING AT LOCAL DEVICE
106
LOCAL PROCESSING SUFFICIENT ?
108
YES
NO
ESTABLISH CONNECTION BETWEEN LOCAL DEVICE AND REMOTE SYSTEM
110
TRANSMIT DATA/SPEECH FROM LOCAL DEVICE TO REMOTE SYSTEM
112
WAIT
113
TIMEOUT ?
114
YES
NO
A
RESPONSE RECEIVED FROM REMOTE SYSTEM ?
116
NO
YES
TERMINATE CONNECTION BETWEEN LOCAL DEVICE AND REMOTE SYSTEM
118
TAKE ACTION BASED ON PROCESSING
120
END SESSION ?
122
NO
YES
A
END

FIG. 1 2D

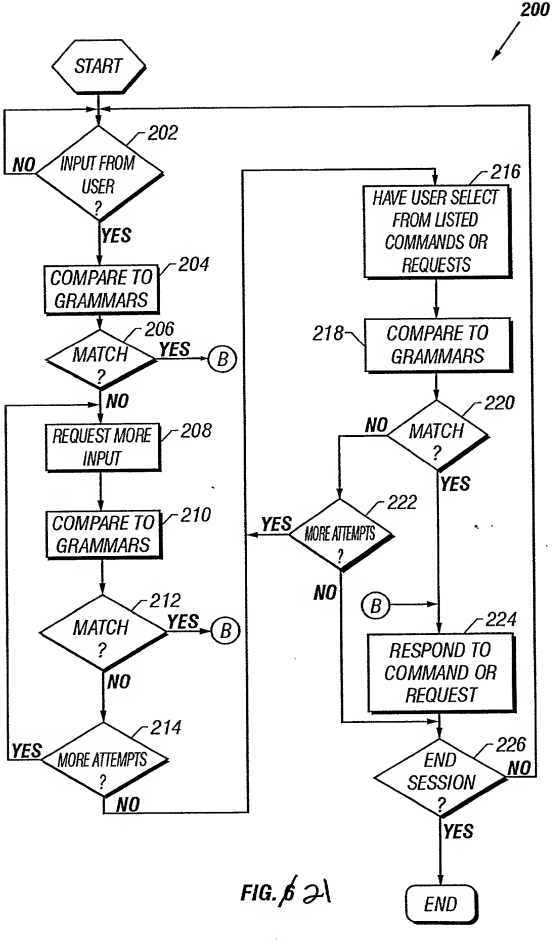
200
START
202
INPUT FROM USER ?
NO
YES
204
COMPARE TO GRAMMARS
206
MATCH ?
YES
B
NO
208
REQUEST MORE INPUT
210
COMPARE TO GRAMMARS
212
MATCH ?
YES
B
NO
214
MORE ATTEMPTS ?
YES
NO
216
HAVE USER SELECT FROM LISTED COMMANDS OR REQUESTS
218
COMPARE TO GRAMMARS
220
MATCH ?
NO
YES
222
MORE ATTEMPTS ?
YES
NO
B
224
RESPOND TO COMMAND OR REQUEST
226
END SESSION ?
NO
YES
END

FIG. 2A